

6AL11

Beam Power Tube— Sharp-Cutoff Pentode

For Combined FM Detector and Audio-Frequency
Output Amplifier Applications in TV Receivers

DUODECAR TYPE

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC). 6.3 ± 0.6 volts
Current at heater volts = 6.3 0.9 amp

Peak heater-cathode voltage (Each unit):

Heater negative with respect to cathode. 200 max. volts
Heater positive with respect to cathode. 200^a max. volts

Direct Interelectrode Capacitances (Approx.):^b

Beam Power Unit:

Grid No.1 to plate. 0.26 pf
Input: G_{1B} to ($K_B + G_{3B}, G_{2B}, IS, H$). 11 pf
Output: P_B to ($K_B + G_{3B}, G_{2B}, IS, H$). 12 pf

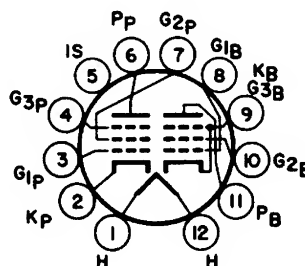
Pentode Unit:

G_{1P} to P_P 0.034 pf
 G_{3P} to P_P 3.2 pf
 G_{1P} to ($K_P, G_{2P}, G_{3P}, IS, H$). 6.5 pf
 G_{3P} to ($K_P, G_{1P}, G_{2P}, P_P, IS, H$). 7.5 pf
 G_{1P} to G_{3P} 0.24 pf
 P_B to P_P 0.12 pf

Mechanical:

Operating Position. Any
Type of Cathodes. Coated Unipotential
Maximum Overall Length. 2.625" ←
Seated Length. 2.000" to 2.250" ←
Diameter. 1.062" to 1.188"
Dimensional Outline (JEDEC 9-59). See *General Section*
Bulb. T9
Base. Small-Button Duodecar 12-Pin (JEDEC No. E12-70)
Basing Designation for BOTTOM VIEW. 12BU

- Pin 1—Heater
- Pin 2—Pentode Cathode
- Pin 3—Pentode Grid No.1
- Pin 4—Pentode Grid No.3
- Pin 5—Internal Shield
- Pin 6—Pentode Plate
- Pin 7—Pentode Grid No.2
- Pin 8—Beam Power Grid No.1
- Pin 9—Beam Power Cathode,
Beam Power Grid No.3
- Pin 10—Beam Power Grid No.2
- Pin 11—Beam Power Plate
- Pin 12—Heater



^a The dc component must not exceed 100 volts.

^b Without external shield.

← Indicates a change.



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Characteristics, Class A₁ Amplifier (Pentode Unit):

Plate Supply Voltage.	150	volts
Grid-No.3	Connected to cathode at socket	
Grid-No.2 Supply Voltage.	100	volts
Grid-No.1	Connected to negative end of cathode resistor	
Cathode Resistor.	560	ohms
Plate Resistance (Approx.).	0.15	megohm
Transconductance, Grid No.1 to Plate.	1000	μ hos
Transconductance, Grid No.3 to Plate.	400	μ hos
Plate Current	1.3	ma
Grid-No.2 Current	2.1	ma
Grid-No.1 Voltage (Approx.) for plate μ a = 30 .	-4.5	volts
Grid-No.3 Voltage (Approx.) for plate μ a = 50 .	-4.5	volts

PENTODE UNIT — FM SOUND DETECTOR

Maximum Ratings, Design-Maximum Values:

Plate Voltage	330 max.	volts
Grid-No.3 (Suppressor-Grid) Voltage	28 max.	volts
Grid-No.2 (Screen-Grid) Supply Voltage.	330 max.	volts
Grid-No.2 Voltage	See Grid-No.2 Input Rating Chart at front of Receiving Tube Section	
Grid-No.1 (Control-Grid) Voltage:		
Positive-bias value	0 max.	volts
Plate Dissipation	1.7 max.	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 165 volts.	1.1 max.	watts
For grid-No.2 voltages between 165 and 330 volts	See Grid-No.2 Input Rating Chart at front of Receiving Tube Section	

BEAM POWER UNIT — AMPLIFIER — Class A₁

Maximum Ratings, Design-Maximum Values:

Plate Voltage	275 max.	volts
Grid-No.2 (Screen-Grid) Voltage	275 max.	volts
Plate Dissipation	10 max.	watts
Grid-No.2 Input	2 max.	watts

Typical Operation and Characteristics:

Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 (Control-Grid) Voltage.	-8	volts
Peak AF Grid-No.1 Voltage	8	volts
Zero-Signal Plate Current	35	ma
Max.-Signal Plate Current	39	ma
Zero-Signal Grid-No.2 Current	2.5	ma
Max.-Signal Grid-No.2 Current	7	ma
Plate Resistance (Approx.).	0.1	megohm
Transconductance.	6500	μ hos
Load Resistance	5000	ohms
Total Harmonic Distortion	10	per cent
Max.-Signal Power Output.	4.2	watts

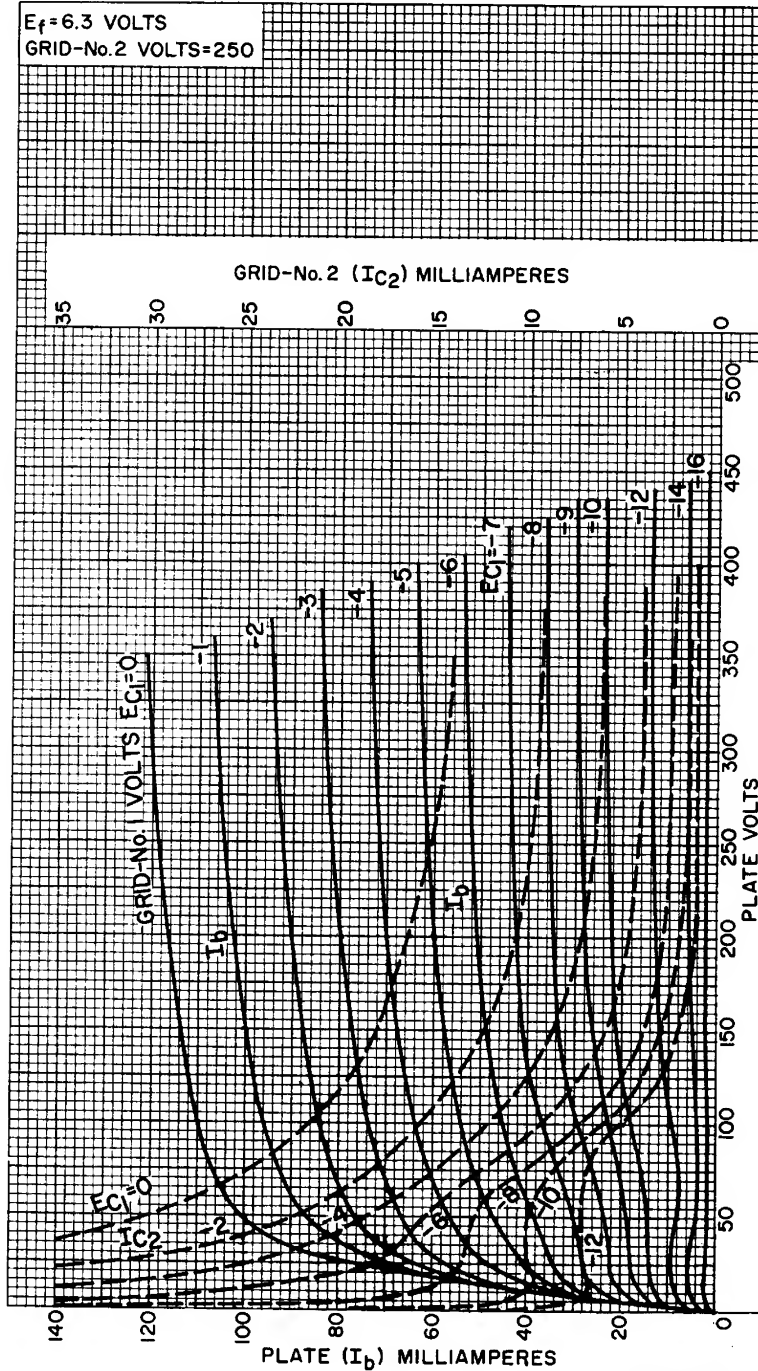
Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation.	0.25 max.	megohm
For cathode-bias operation.	0.5 max.	megohm



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AVERAGE CHARACTERISTICS Beam Power Unit



92CM-12669

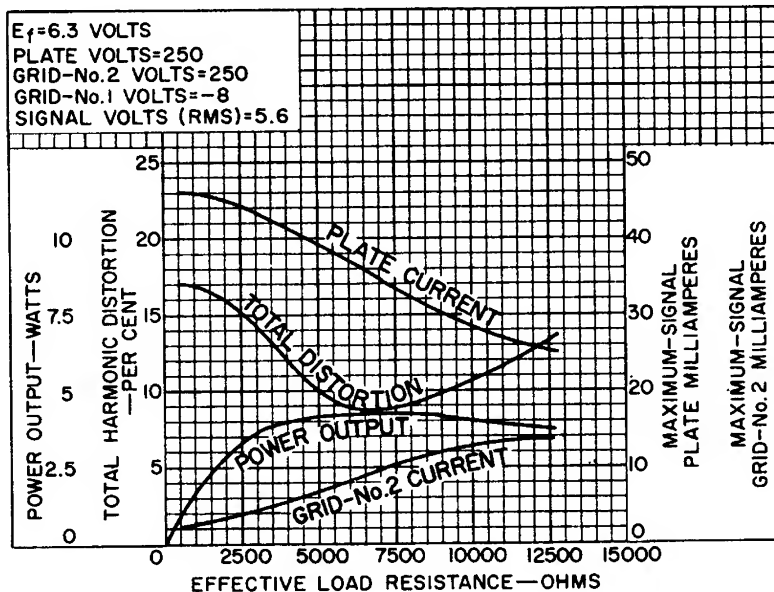


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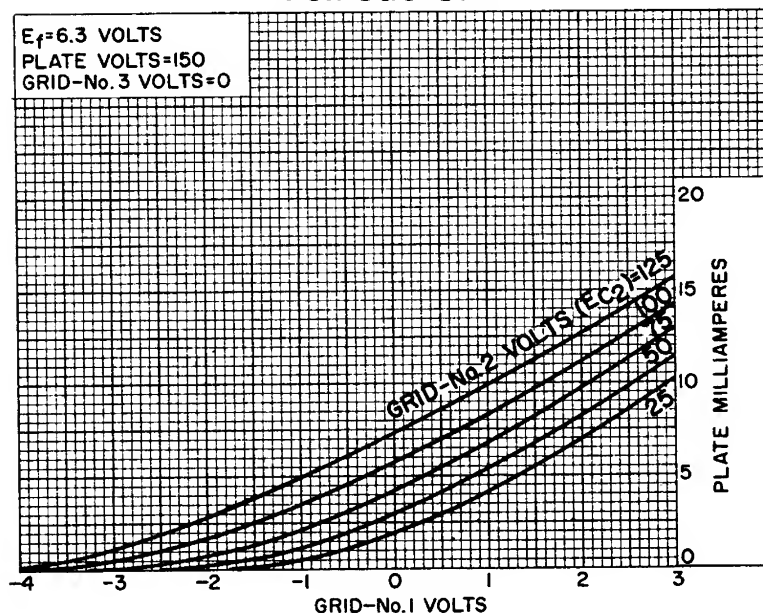
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OPERATION CHARACTERISTICS Beam Power Unit



92CS-12663

AVERAGE CHARACTERISTICS Pentode Unit



92CS-12670

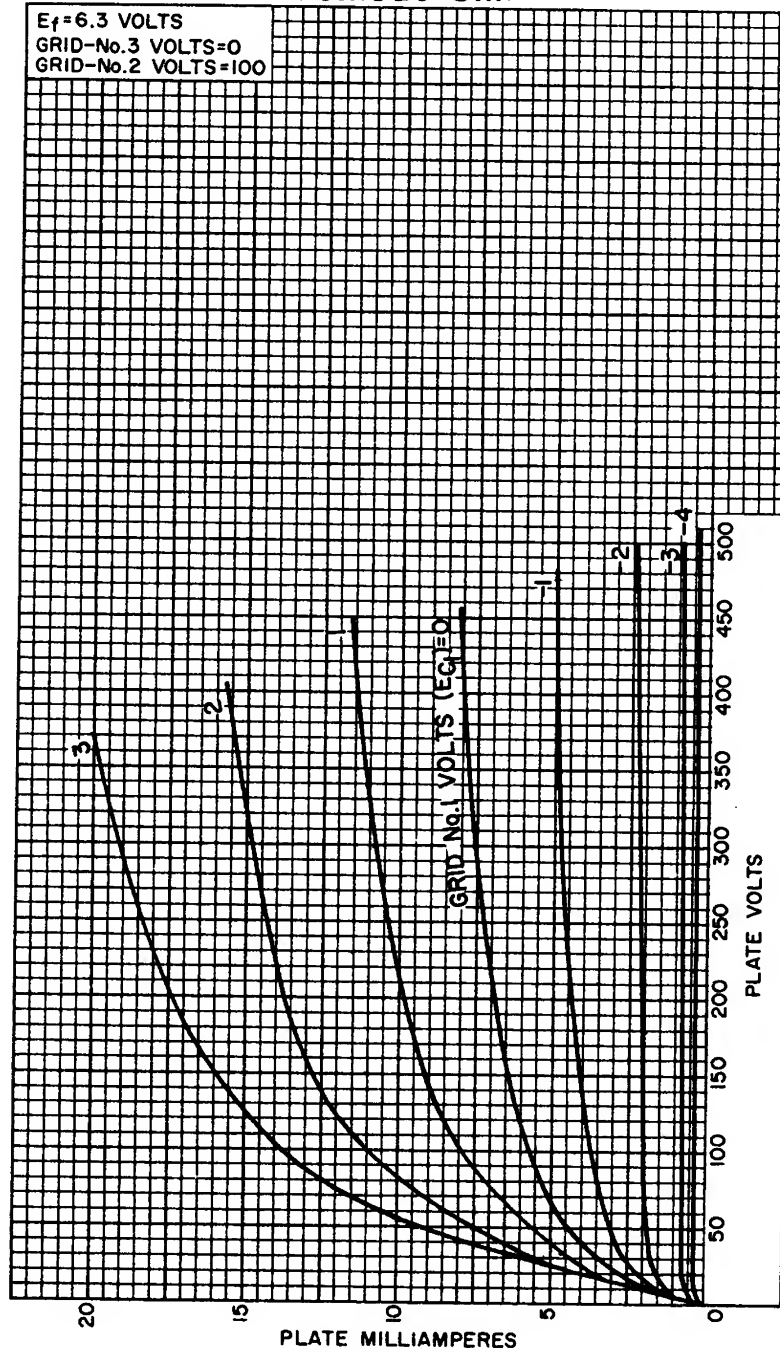
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AVERAGE PLATE CHARACTERISTICS Pentode Unit



92CM-12671

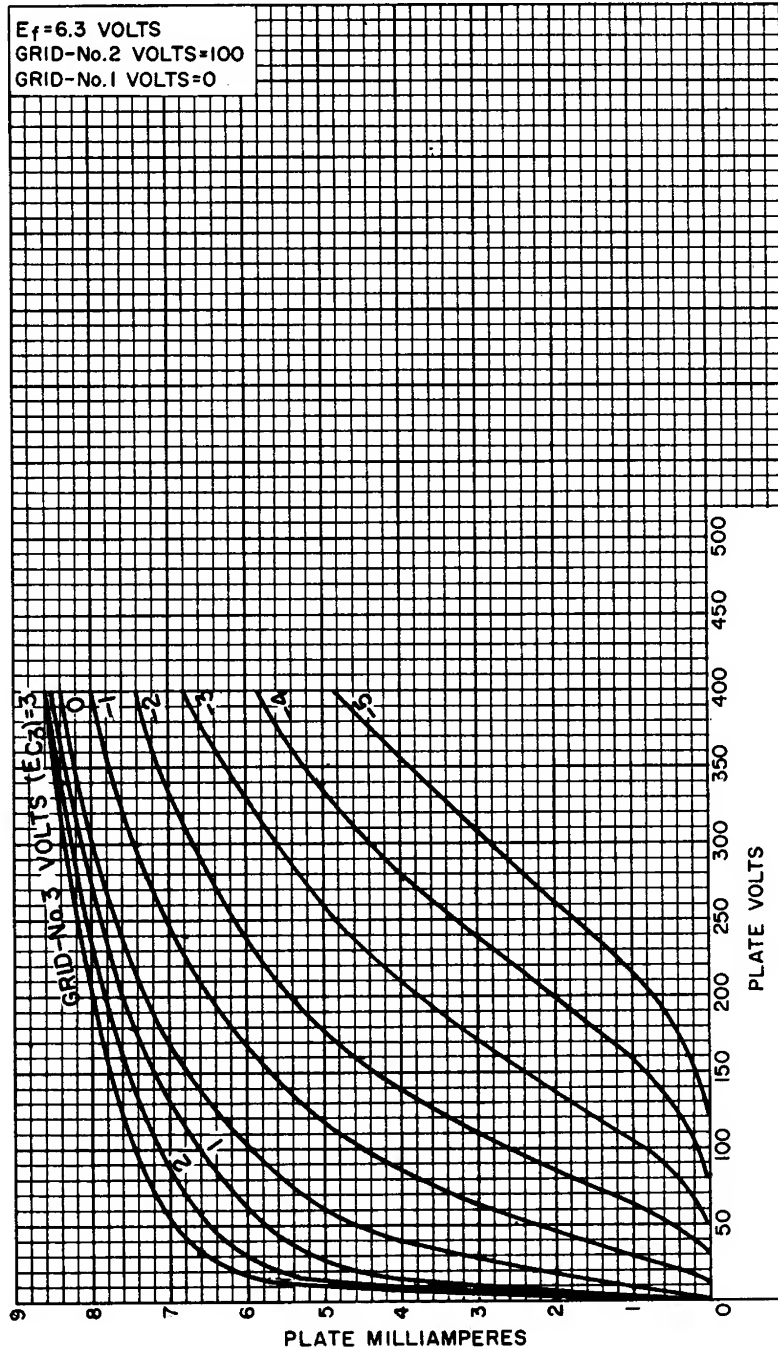


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AVERAGE PLATE CHARACTERISTICS Pentode Unit



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